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'The Doctor Is In': An Exploration of the Role of Affirmative Action in Medical School Admissions Policies in Addressing Geographic and Demographic Maldistribution of Physicians

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Abstract

In recent years, the use of ‘race’-based affirmative action at the University of Cape Town Medical School has become a highly contested subject. However, the practicality of implementing an alternative inequality-reducing policy remains unknown. The present study aims to discover whether is it possible to develop a multi-dimensional points system to replace the current ‘race’-based affirmative action and what the impact of such a policy would be on the ‘racial’ demographics of the admitted student body and their likelihood of responding to South African healthcare needs. Based on the relevant existing literature, various point systems are developed, which award points for attributes such as rural origin or disadvantage, in addition to academic achievements. Subsequently, the impact of these point systems is assessed in comparison to the impact of the current ‘race’-based affirmative action policy. The data suggest that within the context of the University of Cape Town Medical School, it is possible to utilise factors other than ‘race’ to create an effective affirmative action policy aimed at redressing inequality. Additionally, such a policy has promising implications for addressing both demographic and geographic maldistribution of South African physicians.

1. Background to the Study

South Africa is a country burdened by a history of severe inequality. From the time European settlers colonised the Cape in 1652, native populations have been subjugated, exploited and marginalised. This 'othering' consistently manifested in the exclusion of non-European populations from equal opportunities in the realms of education and employment. Even today, South Africa has one of the highest rates of income inequality in the world, with the line between rich and poor largely tracing 'racial' boundaries. However, in recent years various steps have been taken to remedy this adverse state of affairs. In particular, as part of the transformation towards the so-called 'New South Africa', affirmative action legislation has been widely implemented with the aim of redressing past injustices, reducing inequalities, and bolstering the opportunities of those who are considered to have been 'previously disadvantaged'.

While such an initiative may appear constructive in theory, it is surrounded by significant debate in the public sphere. Such debate is particularly salient within the context of university admissions and placement. At the University of Cape Town (UCT) – a historically 'white', English-language institution – highly-publicised discussions and contestations over admissions policy, between academics, administrators, students and the public, reached fever pitch in 2010-11.

While most agree that affirmative action is essential to tackling the inequalities which permeate South African society, debate surrounds the utilisation of 'race' as an indicator of disadvantage. In support of using 'race' in this way, Vice-Chancellor Dr. Max Price (2010) argues that, until alternatives are available, 'race' serves as a practical and adequate gauge of whether an applicant comes from a disadvantaged background; this position draws on the fact that 'race' and class do remain closely correlated in post-apartheid South Africa. In opposition, Professor Neville Alexander (2010), previous director of PRAESA (Project for the Study of Alternative Education in South Africa) at the University of Cape Town, opposed this use of 'race'. He contended that the university's use of 'race'-based affirmative action is a sign of its submission to the ANC government's 'racist agenda'. He has further argued that the continued use of 'racial' categories to determine disadvantage is dangerous as it sustains 'race'-based difference and victimisation, impedes any change to a non- or post-racial social world and could even lead to violence. This latter concern is based upon the political mechanisms and genocidal outcomes of 'racial' exclusion seen in Rwanda. In South Africa, Alexander (2010) argues, sections of the large Black South African middle class (comparable to the Hutu in Rwanda) have an incentive to play the 'race' card, so as to shift popular resentment and exclusion

from the middle class onto the White minority (comparable to the Tutsi). Within such circumstances, the 'racialised' and 'othered' minority becomes the scapegoat for class-based inequality. Professor Jonathan Jansen (2010), Vice-Chancellor of the University of the Free State, shares Alexander's concerns and contends that the use of apartheid 'race' categories in itself serves to maintain the apartheid philosophy of difference in South Africa. He suggests that as students of all 'racial' groups have been seen to achieve in supportive schooling conditions, 'race' itself is no longer an adequate indicator of disadvantage in university admissions. In the current study, I stand in agreement with Alexander's and Jansen's argument for the need to develop an alternative way of addressing inequalities associated with 'race' without relying on continued 'racial' categorisation.

While the multi-faceted nature of this debate has been explored at length by academics and the public alike, it appears that the question of 'racial' redress and multiculturalism may in fact be overshadowing other equally critical issues in South African society. In Europe and North America there is a powerful criticism of multicultural policies on the basis that they undermine efforts to promote class redistribution. Following this line of reasoning, the self-proclaimed egalitarian liberal Brian Barry (2001: 8) quite provocatively stated that 'a politics of multiculturalism undermines a politics of redistribution.' Barry (2001: 11-12) would have liked to see a world with less inequality (material and otherwise), but he had severe apprehensions that multicultural politics would achieve a more egalitarian society:

> 'The proliferation of special interests fostered by multiculturalism is furthermore, conducive to a politics of 'divide and rule' that can only benefit those who benefit most from the status quo. There is no better way of heading off the nightmare of unified political action by the economically disadvantage that might issue in common demands than to set different groups of the disadvantaged against one another. Diverting attention away from shared disadvantages such as employment, poverty, low-quality housing and inadequate public services is an obvious long-term anti-egalitarian objective.'

One such 'shared disadvantage,' which might also be addressed by university admissions policies, is the current maldistribution of appropriate health care personnel in the South African medical system. This is the focus of the current study.

In accordance with various international standards, South Africa has recently committed itself to addressing several healthcare priorities, including improving

child and maternal health and combating HIV/AIDS. However, the path to attaining these healthcare goals continues to be blocked by various structural problems, one of the most serious being the maldistribution of appropriate medical personnel (Chopra, 2009; Padarath, 2003). While South African universities utilising 'race-based' affirmative action do produce racially representative classes of outstanding doctors, these individuals, regardless of their 'race', tend not to practice in rural areas where they are needed most. While there are various socio-political causes for this maldistribution, recent research has shown that medical students of rural origin are more likely to return to rural practice than their urban peers (de Vries & Reid, 2003; Tumbo, Couper & Hugo, 2009). This demonstrates that medical schools may have the ability to select applicants who are more likely to go on to serve South Africa's poorest, rural communities most effectively.

Generally, admissions systems have taken one of two forms. Quota- or target-based systems specify numbers of students to be admitted, usually by a single criterion (such as 'race'). Alternatively, multi-dimensional systems take into account multiple criteria, usually through some kind of a points system, where points can be adjusted so as to achieve any given target of places for any given category of students. The University of Cape Town Medical School currently employs an admissions policy that utilises 'race' as a single criterion in order to ensure racial redress, whilst paying no attention to criteria such as likelihood to work in rural areas. Might this policy be revised through the utilisation of a variety of criteria besides 'race' so as to give preference to students who are more likely to fill the current healthcare gaps?

Research Question

This study was driven by two related research questions. Firstly, within the context of the University of Cape Town Medical School, *is it possible to develop a multi-dimensional points system to replace the current 'race'-based affirmative action?* And secondly, *what would be the impact of such a policy on the 'racial' demographics of the admitted student body and their likelihood of responding to South African healthcare needs?*

This study answers these questions in three stages:

1. I review the existing literature, outlining issues surrounding and recommendations for medical school admissions policies that are relevant within the context of South African healthcare delivery needs.
2. I develop various point systems, based on recommendations found within the literature, which award points for various attributes such as rural origin or disadvantage, in addition to academic achievements.

3. I test the impact of these point systems, in comparison with the current 'race'-based affirmative action policy, on the demographics of the admitted student body at the UCT Medical School and their likelihood of practicing in rural areas.

A Note on 'Race'

As a researcher working with notions of 'race,' I would like to endorse the philosophy of 'race' informed by racial formation theory. In a broad sense, this theory, proposed by Winant and Omi (2002), is based on the notion that both individual and society *construct* 'race' and, in turn, 'race' moulds people, their identities and the wider social structure. More specifically, 'race' is viewed as neither permanent, as it has no biological base, nor an illusion, as it clearly shapes the world in which we live. Instead, 'race' is presented as a social construct, the meaning of which shifts over time, in context, and with changing power relations. Acknowledging this notion of 'race,' I surround the term 'race' in inverted commas as recognition of the socially-constructed and problematic nature of this concept. This act signifies awareness of the tension one encounters between re-inscribing the notion of 'race' and acknowledging the inequalities for which it stands when attempting to eradicate both these inequalities and the idea itself. This notion of 'race' as socially-constructed may put me at odds with many proponents of affirmative action who regard 'race' as more immutable than 'racial' formation theory would suggest; however, I would like to suggest that affirmative action, including multi-dimensional point systems, need not necessarily rely on 'racial' categorisation as a means of addressing societal inequalities.

2. Identifying Obstacles to Progress in the South African Healthcare System

Since the ushering in of democracy in 1994, South Africa has seen numerous political and institutional changes, including many in the health sector. Initiatives have aimed at reducing inequalities in health and health services, integrating disparate healthcare systems, and promoting primary, community-based care. Universal maternal and child primary health care services have been provided, abortion legalised and hundreds of clinics built. Additionally, the South African government has taken significant steps to improve living conditions and promote health through their provision of housing and services such as potable water, electricity and sanitation.

While these policy changes and infrastructural interventions should have led to significant improvements in health, a review of the current literature reveals that progress towards many health targets has been insufficient and, in some cases, nonexistent (See Table 1). In a recent edition of *The Lancet* dedicated to South Africa's health situation, various authors present a picture of a country assaulted by four simultaneous epidemics, pertinently referred to as the 'quadruple burden of disease'. The first burden identified is that of HIV/AIDS, the South African prevalence of which is globally unparalleled (Abdool Karim et al., 2009). Currently HIV prevalence among adults aged 15-49 sits at 17.8%; while prevalence is stabilising it has not yet begun to decrease (World Health Organisation, 2011). The second burden is that of widespread injury, both accidental and violent (Seedat et al., 2009). Rates of interpersonal violence, accidents and injury have been decreasing but currently remain high (Day and Gray, 2008). The third burden is comprised of infectious diseases, such as tuberculosis, which are exacerbated by high rates of poverty, malnutrition, and HIV (Abdool Karim et al., 2009). Currently, prevalence of TB in South Africa is 998 per 100 000 population (World Health Organisation, 2011). This prevalence is increasing, including drug-resistant and extremely drug-resistant strains (World Health Organisation, 2011). Finally, the fourth burden is the escalating prevalence of chronic non-communicable diseases related to relatively affluent lifestyles such as cancer, diabetes and heart disease (Day & Gray, 2008; Mayosi et al., 2009).

In the midst of these epidemics, it is unsurprising that South Africa faces increasing rates of maternal and child mortality (300 per 100 000 and 57 per 100 000 respectively) and decreasing overall life expectancy (currently 57 years at birth) (Chopra et al., 2009; Statistics South Africa, 2011). This combination of

acute and chronic diseases spanning all age groups and socioeconomic classes places overwhelming pressure on South Africa's healthcare delivery system (Chopra et al., 2009). Within this context, effective action requires that health priorities are identified, targets set, and obstacles in achieving said targets addressed.

Priorities for South African Healthcare

In terms of identifying health priorities, various national and international health organisations have offered suggestions as to which health issues should take precedence in the South African healthcare system. These priorities will now be briefly identified.

United Nations: Millennium Development Goals

In accordance with the United Nations Millennium Development Goals (United Nations, 2010), South Africa has recently committed itself to improving child and maternal health and combating HIV/AIDS and other major diseases. These goals are accompanied by six targets. Between 1990 and 2015 South Africa should (1) reduce the under-five mortality by two thirds and (2) reduce the maternal mortality ratio by three quarters. By 2010 it must (3) achieve universal access to treatment for HIV/AIDS. By 2015 South Africa must (4) achieve universal access to reproductive health and have stopped and begun to reverse the spread of (5) HIV/AIDS and (6) other major diseases (United Nations, 2010).

World Health Organisation: Country Cooperation Strategy, 2008-2013

In addition to improving child and maternal health and addressing the HIV/AIDS epidemic, the World Health Organisation (WHO) recommends two additional health priorities for South Africa as part of their Country Cooperation Strategy (WHO Regional Office for Africa, 2011). Firstly, considering South Africa's second and fourth largest burdens of disease, the WHO suggests that the prevention and reduction of chronic non-communicable diseases and accidental and violent injuries be prioritised. Secondly, from a more structural angle, the WHO advocates for strengthening of health policies and systems, improving access and reducing health inequalities.

Table 1: South Africa's current health priorities and trends

Health Priorities	Current Statistics and Trends
1. Increase life expectancy	▪ Life expectancy at birth: 57 years ▪ Trend: Decreasing
2. Reduce child mortality	▪ Under 5 mortality rate: 57 per 1000 live births ▪ Trend: Increasing
3. Reduce maternal mortality	▪ Maternal mortality: 300 per 100 000 live births ▪ Trend: Increasing
4. Promote healthy and responsible sexual and reproductive health behaviours	▪ Percentage of population with HIV knowledge (knowledge that a person can protect him / herself from HIV infection by condom use): 89% ▪ Percentage of public healthcare facilities where condoms are freely available: 97% ▪ Percentage of clinics with family planning services every weekday: 94%
5. Combat HIV/AIDS, TB, and other infectious diseases	▪ HIV prevalence among adults aged 15-49: 17.8% ▪ HIV Trend: Prevalence stabilising but not decreasing; South Africa has the highest rate of HIV infection worldwide. ▪ TB prevalence per 100 000 population: 998 ▪ TB Trend: Prevalence increasing; including drug-resistant and extremely drug-resistant strains.
6. Reduce disease, disability, and death from non-communicable diseases, accidents, violence, and injuries	▪ Non-communicable diseases accounted for 35% of the burden of disease in 2000. ▪ Trend: Rising mortality rate from non-communicable diseases: diabetes, hypertension, kidney disease, and cancer. ▪ Rates of interpersonal violence, accidents, and injury have been decreasing but currently remain high.
7. Strengthen health system effectiveness, improve access, and reduce health inequalities	▪ Access is perceived to have improved but long waiting times, staff shortages, and lack of beds (particularly in rural areas), and unavailability prescribed medications remain.

Trend data sourced from: Day & Gray (2008), Statistics South Africa (2011), United Nations (2010), World Health Organisation (2012).

South African National Department of Health: Health Priorities

In keeping with the standards set by the United Nations and the WHO, the South African National Department of Health mirrors the aforementioned priorities (South African Department of Health, 2011). Additionally, in accordance with their mantra, 'A long and healthy life for all South Africans,' they identify increased life expectancy as a health priority.

Compilation and Interaction of Health Priorities

As seen in Table 1, the health targets proposed by the three previously discussed organisations can be compiled into seven health priorities for South Africa. However, it is important to note that progress in the first six priorities (*increase life expectancy; reduce child mortality; reduce maternal mortality; promote healthy and responsible sexual and reproductive health behaviours; combat HIV, TB, and other communicable diseases; and reduce disease, disability, and death from non-communicable diseases, accidents, violence, and injuries*) relies largely on progress in the seventh (*strengthen health system effectiveness, improve access, and reduce health inequalities*). Thus, developing a universal, functioning and equitable healthcare delivery system is essential for the attainment of all other healthcare goals. However, at present the South African healthcare system is riddled with numerous structural problems, one of the most serious being shortages of appropriate medical personnel caused by inequitable distribution of human resources (Day & Gray, 2008; Chopra et al., 2009; Padarath et al., 2003).

Maldistribution: An Obstacle to Progress

According to the WHO Department of Human Resources for Health (2008: 1), 'challenges with the health workforce are the single most important obstacle to improving the performance of health systems and achieving key health objectives, particularly in low and middle income countries.' This assertion has been supported by international research which has shown a positive correlation between availability of health personnel, quality of care, and health outcomes (International Council of Nurses, 1999; Mercer et al., 2002).

In sub-Saharan Africa, scarcity of medical practitioners has been deemed a 'crisis' (Huddart & Picazo, 2003). In South Africa specifically, research has identified maldistribution and brain drain of health professionals as consistent impediments to effective health delivery (Chopra et al., 2009; Day & Gray, 2008; Padarath et al., 2003). Focusing on maldistribution of medical practitioners, this section aims to discuss four types personnel imbalance which have been identified as current problems within the South African healthcare delivery system.

It should be noted that this focus on maldistribution is not intended to suggest that other obstacles to healthcare delivery be treated with lesser urgency. Instead, maldistribution has been adopted as a primary focus due to the fact that this issue, as opposed to many others, may be able to be partially addressed by medical school admissions policies.

Public and Private Sector Imbalances

Imbalances between the public and private health sectors in South Africa are prevalent. In terms of monetary resources, it is estimated that the private sector consumes almost 60% of the total health expenditure for the country (Chopra et al, 2009). As a result, private medicine tends to absorb a disproportionate percentage of skilled medical practitioners, resulting in shortages in the public sector (Chopra et al., 2009; McIntyre et al., 1995; Sonderland, Schierhout, & van den Heever, 1998). In fact, in 1999, it was estimated that 73% of general practitioners in South Africa were working in the private sector despite the fact that this sector served less than 20% of the population (Goudge et al., 2001; Padarath et al., 2003). This situation naturally restricts the capacity of the public sector to respond adequately to the health crisis growing amongst the majority of the population.

Imbalances Between Tertiary and Primary Levels of the Health System

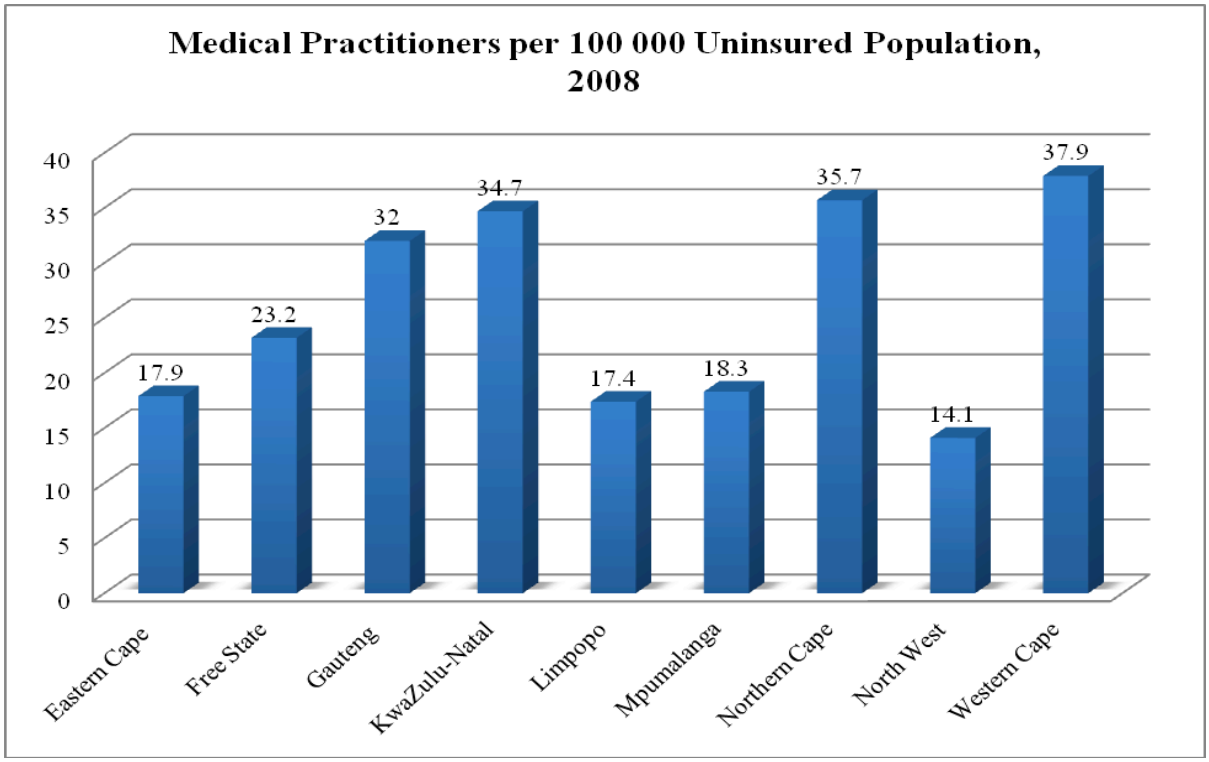
In addition to public and private sector imbalances, South Africa also faces maldistribution of medical practitioners between tertiary and primary levels of the health system (Chopra et al., 2009; Padarath et al., 2003). This situation is also largely driven by unequal resource distribution as health expenditure tends to be dominated by tertiary-level hospitals, particularly in large metropolitan centres (Chopra et al., 2009). While these hospitals provide essential specialised services and teaching opportunities, they are not on the front line of South

Africa's quadruple burden of disease, which demands response from strong primary and community care sectors.

Geographic Imbalances

Geographic maldistribution of medical practitioners between urban and rural areas also poses a problem in South Africa (Day & Gray, 2008; Padarath et al., 2003). As can be seen in Figure 1, when examining provincial rates of doctors per 100 000 members of the population, it is clear that largely urban provinces, such as the Western Cape (37.9) and Gauteng (32), tend to have significantly higher rates of medical practitioners than mainly rural provinces such as the North West (14.1) and the Eastern Cape (17.9) (Day & Gray, 2008). This imbalance, too, has been seen to be influenced by disproportionate resource allocation (McIntyre et al., 1995). While it must be noted that provincial rates are an imperfect proxy for urban / rural imbalances, these are the best indicators available at present as data on urban / rural districts have yet to be collected.

Figure 1: Public sector medical practitioners per 100 000 uninsured population by province.



Data sourced from Day and Gray (2008)

‘Racial’ Imbalances

Lastly, remnants of South Africa’s segregated past linger in the form of ‘racial’ imbalances (Day & Gray, 2008). As seen in Table 2, in 2008 the number of registered medical practitioners who were classified as White was almost triple that of those classified ‘African’ (Day & Gray, 2008). This is despite the fact that the size of the African population in South Africa is approximately eight times that of the White population (Statistics South Africa, 2011).

Table 2: Registered medical practitioners by ‘racial’ group, 2008

	African	Coloured	Indian	White
Number	5 564	521	4 467	15 744
% of Total	21%	2%	17%	60%

Data sourced from Day and Gray (2008)

However, it is important to note that, as these data are not disaggregated by age, one cannot assume that these ‘racial’ imbalances are remaining constant. In fact, it is possible that this ‘imbalance’ has already begun to be redressed in terms of new registration of young doctors, while the current total percentages reflect the overwhelming predominance of White doctors in the older age cohorts. Additionally, in contrast to public and private sector, primary and tertiary, and urban and rural imbalances which impede health service delivery to large segments of the population, ‘racial’ maldistribution is not, in and of itself, detrimental to the functioning of the healthcare system. As long as doctors are properly trained, their ‘racial’ classification usually matters very little to the people they treat. What does matter, however, is whether promising individuals from disadvantaged backgrounds, who often happen to be classified as Black or Coloured, are given opportunities to become medical practitioners, and whether these opportunities are comparable to those enjoyed by individuals from advantaged backgrounds, who often happen to be classified White or Indian.

Focus of the Present Study

While the imbalances between both the public and private sector and the primary and tertiary levels of the health system are critical problems in South Africa, this study focuses on geographic and ‘racial’ imbalances of medical practitioners.

This focus is based on the fact that these types of maldistribution may be able to be partially addressed by medical school admissions policies.

Padarath et al. (2003: 20) have argued that 'the production of health workers within southern Africa is a key factor determining the availability and distribution of health personnel within the health system.' Thus, one may suggest that focus be shifted to medical school admissions and affirmative action policies as possible arenas for change. Following this logic, this study was conducted as an exploration of the potential of such policies at the University of Cape Town to address geographic and 'racial' maldistribution of medical practitioners. The following section will further examine the current literature on this link after providing a discussion of current affirmative action policies and the debate surrounding said policies.

3. Affirmative Action in University Admissions

Transformation following the end of legal segregation, both in South Africa and abroad, has often been marked by widespread implementation of affirmative action legislation aimed at redressing past injustices, reducing societal inequalities, and increasing opportunities for those who are considered to have been 'previously disadvantaged'. While attempting to maintain their standards of excellence, publicly funded universities in particular have adopted affirmative action as standard practice in admissions and placement as one way of contributing to the public good (Featherman, 2009; Hall, 2003).

In South Africa, the University of Cape Town Medical School is one such institution. Although UCT has a strong history of merit-based admissions (Mabokela, 2000), affirmative action policies have been broadly implemented in recent years. These policies constitute 'race'-based affirmative action as access is determined on a downward sliding scale of 'racial' characteristics from White to Indian/Chinese to Coloured to Black; applicants who are higher on the 'racial' scale are required to attain higher standards in academic performance to be admitted (See Table 3). In recent years, these 'race'-based affirmative action policies have proven to be successful in increasing the admittance of 'previously disadvantaged' groups and assembling a student body which is more 'racially' representative of the provincial population.

However, while the policy of affirmative action may appear to be a simple and constructive means of reducing inequalities, it is surrounded by significant debate in the academic and public spheres, both in South Africa and abroad. In the Unites States, recent Supreme Court cases filed against the University of

Michigan (*Gratz v. Bollinger* and *Grutter v. Bollinger*) indicate that significant public doubt exists about the appropriateness of affirmative action, particularly of the 'race'-based variation, within the formulation and implementation of public policy (O'Connor & Schwab, 2009). Some states, including California, Texas and Florida, have even gone so far as to ban affirmative action in university admissions altogether. Within this politicised context, it is essential to have a clear conceptualisation of the issues surrounding the use of 'race' as a sole indicator of disadvantage, and the possibility of utilising alternative indicators to address social inequality.

Issues Surrounding the use of 'Race' as a Sole Indicator for Affirmative Action

When discussing 'race' it is essential to remain ever mindful of the history of this concept. Originally, essentialist notions of 'race' were constructed within a context of European Enlightenment thought and the politics of imperialism and colonialism during the 18th and 19th centuries. While the concept had been utilised in South Africa since colonisation, the passing of the Population Registration Act of 1950 further solidified official discourses of 'race'-based difference. It divided the population into three 'racial' categories (White, Black, and Coloured), which were considered at the time to be mutually exclusive and collectively exhaustive (Indian was added later as a separate classification), and served to legitimate inequalities in access to social, political, educational, and economic rights. With a history so steeped in oppression and exclusion, it has been argued that continued 'racial' categorisation has no place within South Africa's new anti-racial democracy (Jansen, 2010a, 2010b). Expecting individuals to categorise themselves today using apartheid categories has been deemed fundamentally unacceptable (Erasmus, 2009a) and expecting the use of apartheid racial categories to right the wrongs of apartheid, short-sighted and naïve (Jansen, 2010b).

Within the context of university affirmative action policies, various issues have been raised surrounding the use of 'race' as an indicator of disadvantage. Firstly, one cannot deny that the use of 'racial' categories leads to 'race'-based exclusion, and with exclusion usually come negative emotions for those who are excluded (Jansen, 2010b). These may include anger towards those who benefit from such categorisation or decreased self-esteem and motivation. This 'racial hurt' creates and sustains divides between those who are White and those who are Black, those who tick box A rather than box B, those who are privileged and those who are excluded (Jansen, 2010b). However, reducing inequalities through

affirmative action does not need to rely on 'racial' categorisation. Lifting up some individuals does not necessarily require that others are pushed down. Redress does not have to be a zero-sum game (Jansen, 2010b).

Secondly, 'race' categories are overly simplistic indicators of disadvantage as they ignore the complexities within 'racial' groups (Erasmus, 2009a; Erasmus, 2009b; Jansen, 2010b). 'Race'-based affirmative action places 'racial' groups within a hierarchy of assumed disadvantage based on the idea that societal oppression is 'racially' stratified (Jansen, 2010b). Personal histories of advantage or disadvantage are overshadowed. Disadvantage with other causes, such as class, orphanhood or disability, is overlooked. This is especially problematic as it has been argued that 'race' has been steadily declining in relative importance as the source of disadvantage in South Africa across the second half of the 20th century (Seekings & Nattrass, 2005). Additionally, as 'racial' classification demarcates clear and finite boundaries, those individuals who do not fit neatly within one group are forced to linger in an uncomfortable, undefined grey area between official categories or choose one with which they may not identify.

Thirdly, in the period since the fall of apartheid, there has emerged a phenomenon of spectacular growth of the Black elite and middle classes. Previously disadvantaged and oppressed Black individuals have become increasingly upwardly mobile and have begun adopting formerly exclusively 'White' employment, consumption habits and social positions. Additionally, schooling has changed dramatically and desegregation of previously 'White', middle class institutions has led to a situation in which many Black learners have the opportunity to attend well-resourced schools and attain quality secondary educations (Jansen, 2010b). Thus, in post-apartheid South Africa, the meaning of 'race' and particularly of 'Blackness' is steadily shifting in response to altered power relations. It may even be suggested, after reviewing political leaders, rising corporate executives and celebrated public figures, that to be Black in South Africa is increasingly becoming the new hegemonic ideal. As a result of these societal shifts, utilising 'race' categories in an attempt to create equal opportunity in the present is problematic. Rather, redress should be focused on disadvantage irrespective of the colour it takes on (Jansen, 2010b). Said disadvantage may be indicated by various factors, including those discussed in the following section.

Fourthly, it is important to recognise that 'race' cannot be dismantled while 'racial' classifications remain in use, even if their use is purely for monitoring purposes. As 'racial' categories prescribe the way in which the world is divided, retaining these categories in official discourses legitimises and normalises

'racial' divisions in everyday life. This is problematic in a country attempting to build a non-racial democracy.

Possible Alternatives

Thus, it is clear that rather than being a simple indicator of disadvantage, 'race' is a matter of history, politics and power. In attempting to build a non-racial society, it is essential that alternative ways of addressing societal inequalities and creating equity of opportunity are identified, without maintaining 'race' consciousness in the minds of South Africans. Five such alternatives will be further discussed in the following section. It must be noted that while gender does continue to be a source of inequality in South Africa, medical school applications and admissions at the University of Cape Town Medical School do not reflect this inequality. Thus, gender is not presented as an alternative indicator of disadvantage.

Class

Rather than relying on 'race' as an indicator of disadvantage, it has been suggested that it may be possible to identify unequal life chances based on economic class (Seekings & Nattrass, 2005). In line with Weberian class theory, 'life chances' are conceptualized as the defining force in class division; those with greater possession of goods, credentials, and opportunity for income – based on the economic market for their property or skills – are placed in higher classes than those who do not have these chances. Thus, within medical school affirmative action policies, students coming from families of lower classes could be privileged over those of higher classes (Jansen, 2010b). Specific indicators of class disadvantage could include parent's income, wealth of schools attended, number of generations of family to attend university and/or access to resources such as libraries and computer facilities (Erasmus, 2009a; Jansen, 2010b).

It must be acknowledged that in South Africa, life chances remain substantially informed by 'racial' social constructions. Even thirteen years after Mbeki's (1998) 'two-nation' assertion, the privileged 'White nation' of South Africa continues to have significantly better life chances than the disadvantaged 'Black nation'. In terms of employment, only 6 percent of the White population is unemployed in comparison to almost a third of the Black population (Statistics South Africa, 2011). Additionally, White individuals hold most senior executive positions in private companies and account for the majority (77.4%) of individuals earning above R750,000 per year (Statistics South Africa, 2011). This

is opposed to Black individuals who hold few senior executive positions in private companies, account for 83 percent of those earning less than R50,000 per year and only 16.3 percent of those earning above R750,000 per year (Statictics South Africa, 2011). Educationally speaking, the White population has very low rates of functional illiteracy (0.4%) in comparison to the Black population (13%), and moderate rates of university education (17%) as opposed to the low rates of university education seen in the Black population (2%) (Statistics South Africa, 2011). However, these correlations between 'race' and class do not imply that continued 'race' consciousness is necessary within medical school affirmative action policies. Rather, this situation suggests that indicators of class could effectively be utilised as an alternative which would naturally serve to increase admission of applicants from these 'racial' groups without relying on the use of 'race.'

Relative High School Performance

In addition to class, relative high school performance might also be utilised as an indicator for admissions. In light of the U.S. Court of Appeals ruling in *Hopwood v. Texas* which deemed 'race'-based affirmative action unconstitutional, the state of Texas has recently adopted a percentage plan as an alternative means of tackling 'racial' and class-based inequality. The Texas Uniform Admissions Law, commonly termed the Top Ten Percent Law, guarantees automatic admission to any public university for applicants who were ranked in the top ten percent of graduates in their senior class (Tienda & Sullivan, 2009). Thus, students are assessed on the basis of their academic performance relative to their peers who had access to the same quality of education, rather than in relation to the total pool of graduates, which is vastly variable in terms of quality of secondary education attained. In addition to Texas, California and Florida have also implemented percentage plans, guaranteeing admission for the top four and twenty percent of graduates, respectively. These plans have successfully led to significant diversification of university student bodies in terms of 'race' and high schools represented, while maintaining standards of academic excellence (Tienda & Sullivan, 2009). As high school grades have been shown to be strong predictors of university success, high-ranking students from poorer schools who tend to have lower test scores do not struggle academically at the university level and consistently achieve results comparable to those of their more advantaged counterparts (Niu & Tienda, 2010; Tienda & Sullivan, 2009).

Thus, based on these successes, medical school affirmative action policies might give preference to students ranked at the top of their high school classes – those

who have achieved high standards relative to their classmates under equal schooling conditions.

Character

In addition to class, and relative academic performance, strength of character could also be utilised as an alternative to 'race' in redressing inequalities (Jansen, 2010b). Thus, selection of students might be based in part on their achievements in spite of obstacles such as disability, abuse or coming from a single-parent household.

Geographical Status

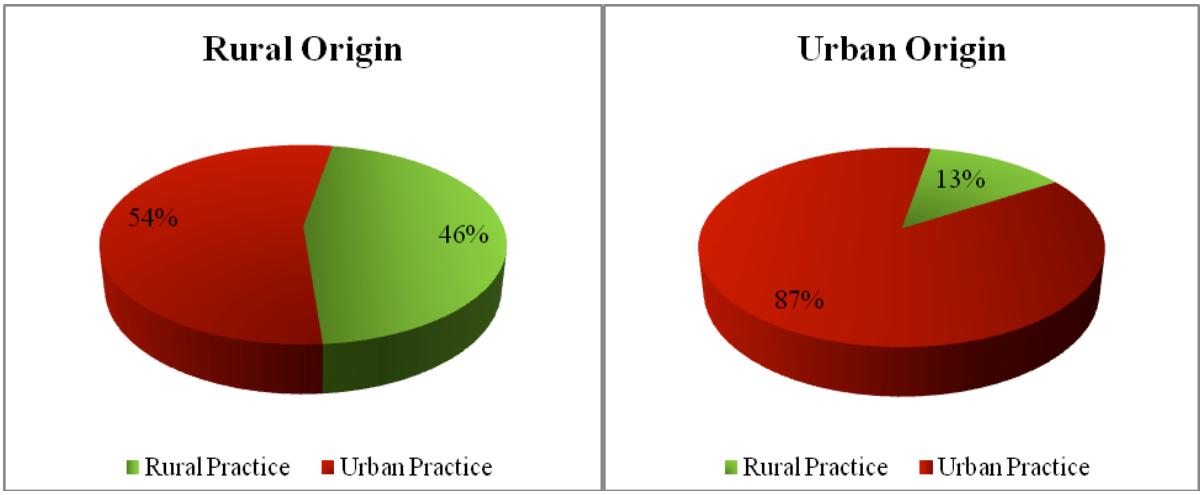
Additionally, when assessing applicants' candidacy for admission one must ensure that the current goal of 'racial' redress does not overshadow other equally critical issues in South African society which might also be addressed by university admissions policies. One such issue is the current lack of appropriate health care personnel in the South African medical system due to geographical maldistribution, as discussed in Section 2. It has been suggested that medical school admissions policies may be able to address this issue by taking geographical status into account (Jansen, 2010b).

Whilst the shortage of doctors in rural areas in many parts of the world has various causes, several commentators have advocated interventions to increase the proportion of rural-origin medical students in medical schools as one way of increasing the number of rural physicians (Bible, 1970; Cullison, Reid & Colwill, 1976; de Vries & Reid, 2003; Madison, 1980; Rabinowitz, 1986; Rabinowitz, 1988; Scheffler et al., 1978; Tumbo, Couper & Hugo, 2009). Evidence from countries such as Australia, Canada and the United States suggests that rural background is strongly associated with rural practice (Cullison, Reid & Colwill, 1976; Easterbrook et al., 1999; Laven & Wilkinson, 2003; Playford, Larson & Wheatland, 2006; Rabinowitz, 1999) In South Africa as well, recent research has shown that medical students of rural origin are significantly more likely to return to rural practice than their urban peers (de Vries & Reid, 2003; Tumbo, Couper & Hugo, 2009).

In a recent questionnaire survey of 82 practicing South African medical practitioners conducted by de Vries and Reid (2003), it was found that 46% of rural-origin respondents currently work in rural practice, compared with only 13% of urban-origin respondents (see Figure 2). This suggests that medical

schools should give preference to applicants from rural backgrounds who are likely go on to serve disadvantaged areas of South Africa most effectively.

Figure 2: Percentage of respondents in rural and urban practice by origin



Data sourced from de Vries and Reid (2003)

Dedication to the Greater Good

Lastly, applicants' dedication to contributing to the greater good through public service might also be a useful indicator of candidacy for admission (Jansen, 2010b). As such, applicants could be assessed in terms of their aspirations to work as a medical practitioner in underserved areas, their previous community service, or their motivation and dedication to the greater good as assessed through interviews, essays and personality and aptitude tests.

In a statement on opposition to 'race' classification in affirmative action, Erasmus (2009b: 339) argues that 'it is important that resistance strives toward unmaking both the inequalities for which the concept stands *and* the concept itself.' Through the use of the five aforementioned alternative indicators it appears as though these two goals are met as inequalities are addressed without maintaining 'race' consciousness.

In conclusion, alternative ways of addressing inequalities are available without maintaining 'race' consciousness in the minds of South Africans. In fact, these alternatives may be able to address more than just disadvantage. Thus, this study is concerned with determining whether is it possible to develop an effective point system to replace the current 'race'-based affirmative action in UCT Medical School admissions policy, which will take origin and disadvantage (as determined by indicators besides 'race') into account. It is acknowledged that

data collection on such factors during the admissions process may require additional time and personnel; however, the benefits of developing a more effective and equitable admissions policy will undoubtedly outweigh the costs.

4. Research Methodology

Conceptualisation

As this study is concerned with determining whether is it possible to develop an effective point system to replace the current 'race'-based affirmative action in UCT Medical School admissions policy, it employs elements of both qualitative and quantitative methodology. Essentially, the study rests upon the assumption that admission can be based upon various attributes, and thus, if relevant attributes were to change, so would the admitted student body.

After reviewing the literature in Sections 2 and 3, it is clear that South African medical school admissions policies must abide by university standards of excellence, and acknowledge South African medical practitioner needs while carrying the banner of equity. Thus, they should aim to accept students based on the following: students' ability to maintain the university's high standards, the way in which they will contribute to redress for past inequalities and their likelihood of addressing South African healthcare needs. However, a review of the current UCT Medical School admissions policy indicates that this institution's success in meeting these aims remains partial and contested.

Table 3: UCT medical school admissions criteria for applicants holding a National Senior Certificate

PROGRAMME AND SELECTION CATEGORY	SUBJECT REQUIREMENTS	MINIMUM LEVEL OF PERFORMANCE AND NSC SCORE TO BE CONSIDERED	ADMISSION POSSIBLE	
MBChB				
Black	Mathematics plus Physical Sciences	Level 4 for: • Maths • Physical Sciences • English **PLUS** • NSC score of 36	NSC score: NBT result:	36/48 12/30
Coloured			NSC score: NBT result:	36/48 12/30
Indian / Chinese			NSC score: NBT result:	40/48 18/30
White / Open			NSC score: NBT result:	42/48 18/30

Data sourced from UCT Undergraduate Prospectus (2011)

As can be seen in Table 3, UCT's current 'race'-based affirmative action admissions policy combines (a) 'racial' category with (b) National Senior Certificate and National Benchmark Test results.

This policy can be translated into the following formula:

$$\mathbf{S = [(NSC + R1) \times 70\%] + [(NBT + R2) \times 30\%]^*}$$

Where:

S = Single Score
NSC = National Senior Certificate score (out of 48, weighted 70%)
R1 = Additional NSC 'points' allocated on the basis of 'racial' category (White/Open = 0, Indian/Chinese = 2, Coloured = 6, Black = 6)
NBT = National Benchmark Test score (out of 30, weighted 30%)
R2 = Additional NBT 'points' allocated on the basis of 'racial' category (White/Open = 0, Indian/Chinese = 0, Coloured = 6, Black = 6)
* This formula (and those that follow) is only utilised for applicants who have met minimum requirements (Level 4 for Maths, Physical Sciences and English, plus NSC score of 36)

Thus, students are awarded a single score on the basis of their NSC score (weighted 70% of total single score), NBT score (weighted 30% of total single score), and additional points added to both their NSC and NBT scores on the basis of 'racial' classification. Applicants are then compared and selected for admission on the basis of this single score. In terms of the basis of admission aims (ability, redress and addressing healthcare needs), the current policy has varying success. While it does take into account students' ability to successfully complete the program by utilising measures of academic performance, the current affirmative action policy to address inequality and disadvantage which utilises 'race' as an indicator of disadvantage is problematic. Additionally, South African healthcare personnel needs are largely ignored.

However, if one were to argue that school-based disadvantage and location of origin were more useful affirmative action criteria than 'race', one may propose the alternative point system conceptualised in the following formulae:

$$\mathbf{S = [(NSC + S1 + O1) \times 70\%] + [(NBT + S2 + O2) \times 30\%]^*}$$

Where:

S = Score
NSC = National Senior Certificate score (out of 48, weighted 70%)
S1 = Additional NSC 'points' allocated on the basis of a measure of school quality
O1 = Additional NSC 'points' allocated on the basis of region of origin
NBT = National Benchmark Test score (out of 30, weighted 30%)
S2 = Additional NBT 'points' allocated on the basis of a measure of school quality
O2 = Additional NBT 'points' allocated on the basis of region of origin

With the utilisation of this system, in addition to academic achievement students would be admitted on the basis of points allocated for disadvantage (indicated by a measure of school quality rather than 'race') and points allocated for likelihood of addressing maldistribution of medical practitioners (indicated by region of origin). This shift in relevant attributes might alter the admitted student body. On the basis of this logic, this study investigates alternatives to the current 'race'-based affirmative action utilised by the UCT Medical School, and assesses the value of such alternatives in terms of addressing South African healthcare needs.

Research Design

Definitions of Alternative Indicator Variables

Based on the data collected during the UCT Medical School application process for admission to the MBChB programme (Medicine) in 2011, two variables were identified which could supplement – or ideally, replace – self-reported 'race' classification as an indicator for affirmative action.

Origin: Applicant's region of origin is determined based on the location of the high school they attended. Schools are classified as rural or urban by the University of Cape Town based on census data for the district in which they were located. Thus, this variable has two levels: 'urban' and 'rural'.

School Wealth: School wealth is a measure of school-based (dis)advantage in which schools are categorised into quintiles (where Q1 = poorest schools & Q5 = least poor schools) based on national census data for school catchment area including income, unemployment rate and level of education (literacy rate) (Kanjee & Chudgar, 2009). This categorisation is determined by the South African Department of Education as a means of determining funding allocation, with more money allocated to the poorest schools and fewer funds allocated to the least poor schools. This quintile system has been shown to be generally effective at identifying school-based disadvantage (as indicated by school resources and proportions of poor/affluent students in attendance) (Kanjee & Chudgar, 2009).

Stage 1: Development of Alternative Admissions Point Systems

Based on the literature review, five alternative point systems for admissions were developed in which the attributes discussed were given point allocations. In this way, the allocation of various points to various factors was explored. The formulas for these alternative systems can be seen in Table 4.

As the current 'race'-based affirmative action policy utilised by the UCT Medical School admissions department attributed a maximum of six additional NSC 'points' and another six NBT 'points' on the basis of 'racial' category, it was assumed that additional affirmative action points in alternative systems should not exceed that amount (unless indicated as 'inflated' system). This is due to the fact that the bounds of affirmative action, relative to simple school results, remain fixed; admitted applicants should still have the majority of their admissions points allocated on the basis of academic achievements as to ensure that students have the ability to maintain the university's standard of excellence.

Table 4: Alternative point systems

Point Systems	Formulas for Calculating Single Score (S)
No AA	**S = (NSC × .70) + (NBT × .30)**
Current 'Race'-Based AA	**S = [(NSC + R1) × .70] + [(NBT + R2) × .30]** **R1:** White/Unknown = 0, Indian/Chinese = 2, Coloured = 6, Black = 6 **R2:** White/Open = 0, Indian/Chinese = 0, Coloured = 6, Black = 6
Alternative 1: 'Race'- & Origin-Based AA	**S = [(NSC + R1 + O1) × .70] + [(NBT + R2 + O2) × .30]** **R1:** White/Open = 0, Indian/Chinese = 1, Coloured = 3, Black = 3 **O1:** Urban = 0, Rural = 3 **R2:** White/Open = 0, Indian/Chinese = 0, Coloured = 3, Black = 3 **O2:** Urban = 0, Rural = 3
Alternative 2: School- & Origin-Based AA	**S = [(NSC + S1 + O1) × .70] + [(NBT + S2 + O2) × .30]** **S1:** PQ1 = 3, PQ2 = 3, PQ3 = 2, PQ4 = 1, PQ5 = 0 **O1:** Urban = 0, Rural = 3 **S2:** PQ1 = 3, PQ2 = 3, PQ3 = 2, PQ4 = 1, PQ5 = 0 **O2:** Urban = 0, Rural = 3
Alternative 3: Inflated School- & Origin-Based AA	**S = [(NSC + S1 + O1) × .70] + [(NBT + S2 + O2) × .30]** **S1:** PQ1 = 6, PQ2 = 6, PQ3 = 4, PQ4 = 2, PQ5 = 0 **O1:** Urban = 0, Rural = 6 **S2:** PQ1 = 6, PQ2 = 6, PQ3 = 4, PQ4 = 2, PQ5 = 0 **O2:** Urban = 0, Rural = 6
Alternative 4: School-, Origin- & 'Race'-Based AA **Alternative 4:** School-, Origin- & 'Race'-Based AA (continued)	**S = [(NSC + S1 + O1 + R1) × .70] + [(NBT + S2 + O2 + R2) × .30]** **S1:** PQ1 = 1.5, PQ2 = 1.5, PQ3 = 1, PQ4 = 0.5, PQ5 = 0 **O1:** Urban = 0, Rural = 3 **R1:** White/Open = 0, Indian/Chinese = 0.5, Coloured = 1.5, Black = 1.5 **S2:** PQ1 = 1.5, PQ2 = 1.5, PQ3 = 1, PQ4 = 0.5, PQ5 = 0 **O2:** Urban = 0, Rural = 3 **R2:** White/Open = 0, Indian/Chinese = 0, Coloured = 1.5, Black = 1.5
Alternative 5: Inflated School-, Origin- & 'Race'-Based AA	**S = [(NSC + S1 + O1 + R1) × .70] + [(NBT + S2 + O2 + R2) × .30]** **S1:** PQ1 = 3, PQ2 = 3, PQ3 = 2, PQ4 = 1, PQ5 = 0 **O1:** Urban = 0, Rural = 6 **R1:** White/Open = 0, Indian/Chinese = 1, Coloured = 3, Black = 3 **S2:** PQ1 = 3, PQ2 = 3, PQ3 = 2, PQ4 = 1, PQ5 = 0 **O2:** Urban = 0, Rural = 6 **R2:** White/Open = 0, Indian/Chinese = 0, Coloured = 3, Black = 3

ABBREVIATIONS			
NSC:	National Senior Certificate score (out of 48)	**NBT:**	National Benchmark Test score (out of 30)
R1:	Additional NSC 'points' allocated on the basis of 'racial' category	**R2:**	Additional NBT 'points' allocated on the basis of 'racial' category
O1:	Additional NSC 'points' allocated on the basis of region of origin	**O2:**	Additional NBT 'points' allocated on the basis of region of origin
S1:	Additional NSC 'points' allocated on the basis of school wealth (poverty quintile 1 **(PQ1)** = poorest school, poverty quintile 5 = least poor school)	**S2:**	Additional NBT 'points' allocated on the basis of school wealth (poverty quintile 1 (**PQ1**) = poorest school, poverty quintile 5 = least poor school)

Alternative 1: 'Race'- and Origin-Based Affirmative Action

The first alternative was 'race'- and origin-based affirmative action. This system acknowledges students' previous disadvantage (indicated by 'racial' category) and likelihood of going on to address healthcare needs (indicated by region of origin). These two criteria receive equal weighting as a maximum of 3 NSC 'points' and 3 NBT 'points' are awarded on the basis of both 'race' and origin (see Table 4). However, this system retains one of the major problems associated with the current system of 'race'-based affirmative action, in that it utilises 'race' as a sole indicator of disadvantage.

Alternative 2: School- and Origin-Based Affirmative Action

The second alternative was school- and origin-based affirmative action. As opposed to utilising 'race' as an indicator of disadvantage, this system uses the wealth of schools that applicants attended as an indicator of this factor. Additionally, applicants' likelihood of going on to address healthcare needs (indicated by region of origin) is recognised. Once again these two criteria receive equal weighting, as a maximum of 3 NSC 'points' and 3 NBT 'points' are awarded on the basis of both school wealth and origin (see Table 4).

Alternative 3: Inflated School- and Origin-Based Affirmative Action

The third alternative was inflated school- and origin-based affirmative action. Just as in alternative 2, this system acknowledges students' previous disadvantage (indicated by school wealth) and their likelihood of going on to address healthcare needs (indicated by region of origin). Once again, these two criteria receive equal weighting. However, rather than maintaining a maximum of 6 additional NSC 'points' and 6 additional NBT 'points', these figures are

doubled so that points awarded on the basis of both school wealth and origin have greater effect on applicants total admissions score (see Table 4).

Alternative 4: School-, Origin- and 'Race'-Based Affirmative Action

The forth alternative was school-, origin- and 'race'-based affirmative action. As opposed to utilising 'race' as a sole indicator of disadvantage or removing it completely as an indicator, this system utilises 'race' as one of two indicators of disadvantage; the other being the wealth of schools applicants attended. Maximum points for these two criteria of disadvantage make up half of the total additional points as 1.5 NSC 'points' and 1.5 NBT 'points' are awarded on the basis of both school wealth and origin (see Table 4). Additionally, applicants' likelihood of going on to address healthcare needs (indicated by region of origin) is recognised and is attributed a maximum of 3 NSC 'points' and 3 NBT 'points.' Thus, points for 'race' and school wealth taken together have a maximum value equal to that of region of origin.

Alternative 5: Inflated School-, Origin- and 'Race'-Based Affirmative Action

The fifth alternative was inflated school-, origin- and 'race'-based affirmative action. Once again this system utilises 'racial' category and the wealth of schools applicants attended as indicators of disadvantage, and recognises applicants' likelihood of going on to address healthcare needs. However, rather than maintaining a maximum of 6 additional NSC 'points' and 6 additional NBT 'points', the maximum point values from alternative 4 are doubled so that points awarded on the basis of both school wealth, origin, and 'race' have greater effect on applicants total admissions score (see Table 4).

Stage 2: Evaluation of the Utility of the Alternative Admissions Point Systems

Sampling and Access

The research population included 4212 anonymised UCT Medical School applications for admission to the MBChB programme (Medicine) in 2011, accessed from the UCT Institutional Planning Department. Each application included data on the applicant's home location, academic results (NSC score, NBT score, Matric subject marks), school details (school name, location, fee

requirements), demographics (nationality, self-reported 'race', gender), financial aid eligibility and final application status.

From this population a sample of 581 applicants was drawn, which included all who were South African citizens or permanent residents, first-time applicants, met the minimum requirements, applied with National Senior Certificates (the current matric scoring system) rather than Senior Certificates (the previous matric scoring system), and whose application information was complete. Thus, applications from international applicants (n=598), transfer students (n=886), applicants not holding a National Senior Certificate (n=1026) and applicants who did not meet the minimum requirements (n=1784) were discarded. Additionally, 3019 applications were excluded from the sample due to incomplete information. These criteria were utilised for three reasons: firstly, so as to remove extraneous variables such as foreign high school qualifications and previous tertiary study; secondly, to limit the sample to only those applicants who meet the minimum requirements for consideration (i.e. in terms of aggregate NSC/NBT scores and results in specified subjects); and, thirdly, to remove applications which could not be of use in this study due to missing information. As the sample was selected on the basis of this range of specific criteria, and every case which met the above criteria was included, it may be possible to generalise findings to other applicants who meet similar criteria.

Methods of Data Analysis

Of the 581 applicants included in the sample, 239 were actual admitted candidates from 2011. Based on the point systems developed in Stage 1, the sample of 2011 UCT Medical School applications were evaluated and 239 theoretically 'successful' candidates were identified for each system. Subsequently, using graphs and charts formulated in Excel, each theoretically successful pool of candidates was compared to the actual successful candidates from 2011 in terms of demographics and likelihood of meeting South African healthcare needs.

Ethical Considerations

When conducting research, one must remain mindful of the ethical standards surrounding utilised research methodologies (Babbie & Mouton, 2009). As the present study utilised secondary data which contained potentially sensitive information, anonymity and confidentiality were the primary ethical concerns. In order to maintain anonymity, the researcher did not have access to the names of

applicants, and thus did not include names in the final report. In order to maintain confidentiality, admissions data were stored as a password-protected file to which only the researcher and her supervisor had access. As this research was unobtrusive, there were no further ethical concerns.

5. Results

Based on the alternative affirmative action systems developed in Stage 1, the sample of 2011 UCT Medical School applications were evaluated and theoretically 'successful' candidates were identified (see Table 6 on page 42). The data were then analysed by comparing each pool of candidates to the actual successful candidates from 2011 (selected through a process of 'race'-based affirmative action) in terms of demographics and likelihood of meeting South African healthcare needs.

Inequalities within the Sample

Prior to discussing the effects of the alternative systems of affirmative action on which students were admitted, it is interesting to note the initial inequalities found in the sample of applicants (see Table 5 and Figure 3). Recall that criteria for inclusion in the sample consisted of the following: applicants must be South African citizens or permanent residents and first-time applicants, must meet the minimum level of school performance and NBT score requirements, must have applied with National Senior Certificates, and must have complete application information.

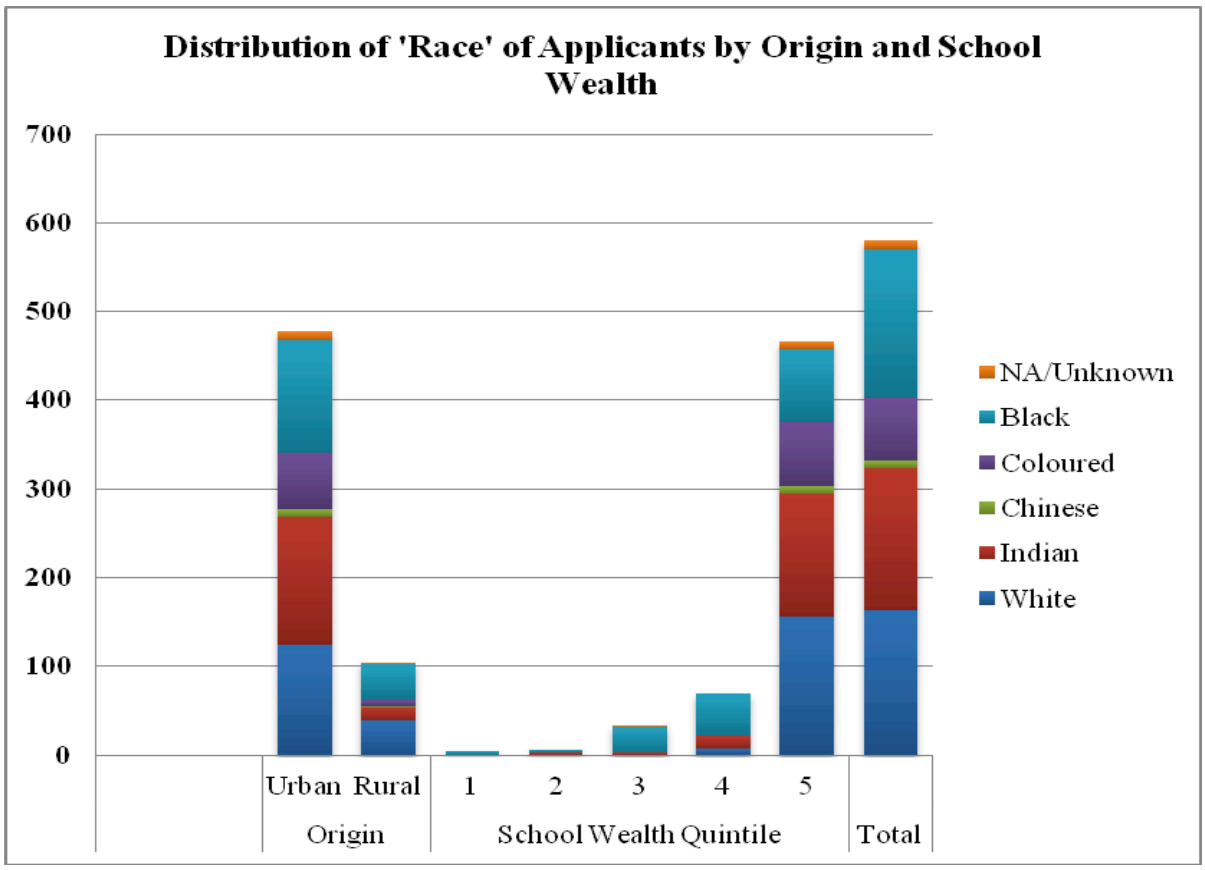
Table 5: Applicants by 'racial' category

			Applicants by 'Racial' Category					
		Total Applicants Included in Sample	White	Indian	Chinese	Coloured	Black	NA/Unknown
Origin	*Urban*	478	124	145	8	64	127	10
	Rural	103	39	15	1	7	40	1
School Wealth Quintile	*1*	4	0	0	0	0	4	0
	2	6	0	3	0	0	3	0
	3	34	0	3	0	0	29	2
	4	70	7	15	0	0	48	0
	5	467	156	139	9	71	83	9
Total		**581**	**163**	**160**	**9**	**71**	**167**	**11**

In terms of 'race', relatively equal numbers of White (n=163), Indian (n=160), and Black (n=167) applicants met the criteria to be included in the sample. However, this equity is problematic as these three respective groups make up significantly different percentages of the national South African population, 9.2%, 2.6% and 79.4% respectively (Statistics South Africa, 2011). Additionally, regardless of the fact that Coloured individuals make up only 8.8% of the general population in comparison to the 79.4% which is comprised of Black individuals (Statistics South Africa, 2011), the number of Coloured applicants who met the criteria to be included in the sample (n=71) was almost half that of Black applicants. These results suggest that Black applicants were significantly underrepresented relative to their share of the national population.

The numbers of applicants from each of the five school wealth quintiles (utilised as an indicator of class-based disadvantage) were also significantly unequal. While 467 applicants from the wealthiest schools met the criteria for inclusion, this figure was more than quadruple the number of students from the four lower school wealth quintiles combined (number of applicants included in the sample from the first, second, third, and forth school wealth quintiles were 4, 6, 34 and 70 respectively). Additionally, applicants from the four lower wealth quintiles were overwhelmingly Black; an indication of a correlation between the 'race' and school wealth variables. This suggests that transformation can be affected without using the 'race' variable.

Figure 3: Distribution of 'race' of applicants by origin and school wealth



In terms of region of origin, the sample also displayed noteworthy inequalities. Of the 576 applicants included in the sample, 473 came from urban areas (as indicated by school location) while only 103 had rural backgrounds. However, it is interesting that the percentages of Black and White applicants from rural areas are almost identical (24.0% and 23.9% respectively), while percentages Coloured, Chinese and Indian rural applicants were much lower (9.9%, 11.1% and 9.4% respectively)

Additionally, it is interesting to note that the number of female applicants who were included in the sample for this study was more than double that of male applicants. This data supports Ncayiyana's (2011) recent argument that the South African medical profession is becoming increasingly feminised.

It is acknowledged that 'racial', class-based and geographical inequalities may be due in part to sampling methods. However, such disparities are mirrored

within medical school student bodies and the medical profession itself, particularly when no affirmative action policies are in place.

Admissions without Affirmative Action

When selecting a theoretically successful group of applicants based solely on academic performance, inequalities identified in the sample as a whole tend to remain or worsen (see Table 6). Without affirmative action policies, i.e. if admissions are based only on school results, then 'racial' gaps widen with only 26 Coloured and 17 Black applicants being accepted as opposed to 106 White and 82 Indian applicants. Additionally, class-based differences prevail as 221 of the 239 admitted applicants attended schools within the top wealth quintile. Only 37 of the admitted applicants have rural backgrounds, as opposed to the 202 of urban origin. Therefore, it is clear that medical school admission cannot be purely meritocratic, and affirmative action policies must be adopted in order to begin addressing this range of inequalities.

Effects of Current 'Race'-Based Affirmative Action

The current 'race'-based affirmative action policy utilised by the University of Cape Town Medical School is successful in increasing the number of Black (n = 84) and Coloured (n = 58) students admitted but it has negligible success in increasing the number of students from poor backgrounds (Q1=0, Q2 = 1, Q3 = 11, Q4 = 31 as opposed to no affirmative action: Q1 = 0, Q2 = 1, Q3 = 1, Q4 = 16) and results in a decrease of students from rural areas (n = 34 as opposed to n = 37 with no affirmative action) (see Table 6).

Table 6: Sample applicants admitted via each affirmative action system

		Total Applicants Included in Sample	Admitted Applicants						
			No AA*	RB AA	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
'Race'	*White*	163	106	40	76	100	91	104	71
	Indian	160	82	54	65	76	68	77	64
	Chinese	9	3	2	2	2	3	2	3
	Coloured	71	26	58	38	23	21	24	34
	Black	167	17	84	55	35	52	28	65
	NA/Unknown	11	5	1	3	3	4	4	2
Origin	*Urban*	478	202	205	169	168	141	172	141
	Rural	103	37	34	70	71	98	67	98
School Wealth Quintile	*1 (Poorest)*	4	0	0	1	1	2	1	2
	2	6	1	1	3	5	6	3	6
	3	34	1	11	11	14	24	8	22
	4	70	16	31	22	20	24	17	25
	5 (Wealthiest)	467	221	196	202	199	183	210	184
Gender	*Male*	187	82	79	91	83	77	83	84
	Female	394	157	160	148	156	162	156	155

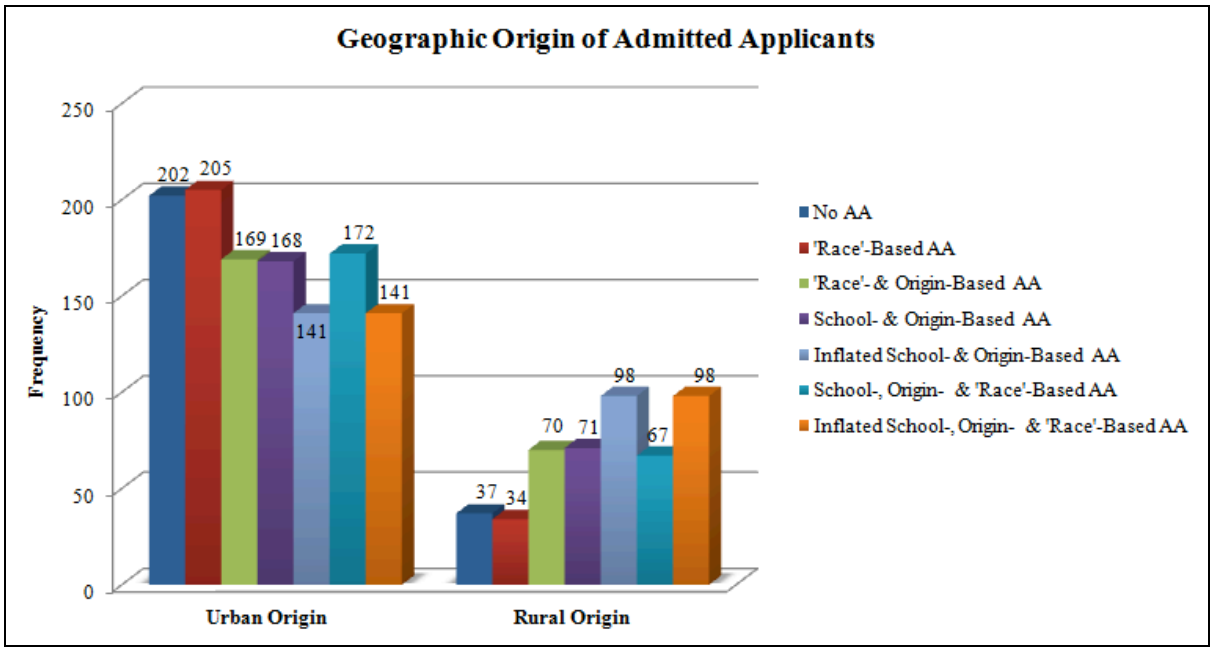
***Abbreviations:**

No AA: No Affirmative Action
RB AA: Current 'Race'-Based Affirmative Action
Alt. 1: 'Race'- and Origin-Based Affirmative Action
Alt. 2: School- and Origin-Based Affirmative Action
Alt. 3: Inflated School- and Origin-Based Affirmative Action
Alt. 4: School-, Origin-, and 'Race'-Based Affirmative Action
Alt. 5: Inflated School-, Origin-, and 'Race'-Based Affirmative Action

Comparison of Alternative Systems in Terms of Addressing Geographic Maldistribution of Medical Practitioners

In terms of the goal of increasing students who are likely to go on to work in underserved areas, the five alternative affirmative action strategies proposed have varying degrees of success (see figure 4). Alternatives 1 ('race'- and origin-based affirmative action), 2 (school- and origin-based affirmative action) and 4 (school-, origin- and 'race'-based affirmative action) each led to approximately double the number of rural students being admitted when compared to no affirmative action and 'race'-based affirmative action. Alternatives 3 (inflated school- and origin-based affirmative action) and 5 (inflated school-, origin- and 'race'-based affirmative action) led to even greater increases, as the number of rural students in these conditions was three times that of those in the no affirmative action and 'race'-based affirmative action conditions. However, it must be noted that these 'inflated' conditions increased the overall weighting of affirmative action points and correspondingly reduced the importance of academic achievements in admissions decisions.

Figure 4: Admitted applicants by region of origin



Comparison of Alternative Systems in Addressing Inequality and Demographic Maldistribution of Medical Practitioners

The five alternative affirmative action strategies proposed also have varying success in terms of increasing equitable opportunity and decreasing demographic maldistribution of medical practitioners. As can be seen in Figure 5, massive class-based inequalities remain, regardless of the type of affirmative action utilised in the admissions process. However, alternatives 3 (inflated school- and origin-based affirmative action) and 5 (inflated school-, origin- and 'race'-based affirmative action) are successful in reducing the number of admitted applicants from the wealthiest quintile of schools.

As can be seen in Figure 6, in terms of addressing demographic maldistribution of medical practitioners the current 'race'-based affirmative action is most successful, as it increases the number of admitted Coloured applicants from 26 to 58 and the number of admitted Black applicants from 17 to 84. However, if only alternatives which do not include 'race' as an indicator are included, it is clear that alternative 3 (inflated school- and origin-based affirmative action) most successfully increases the number of admitted Black applicants.

Figure 5: Admitted applicants by school wealth quintile

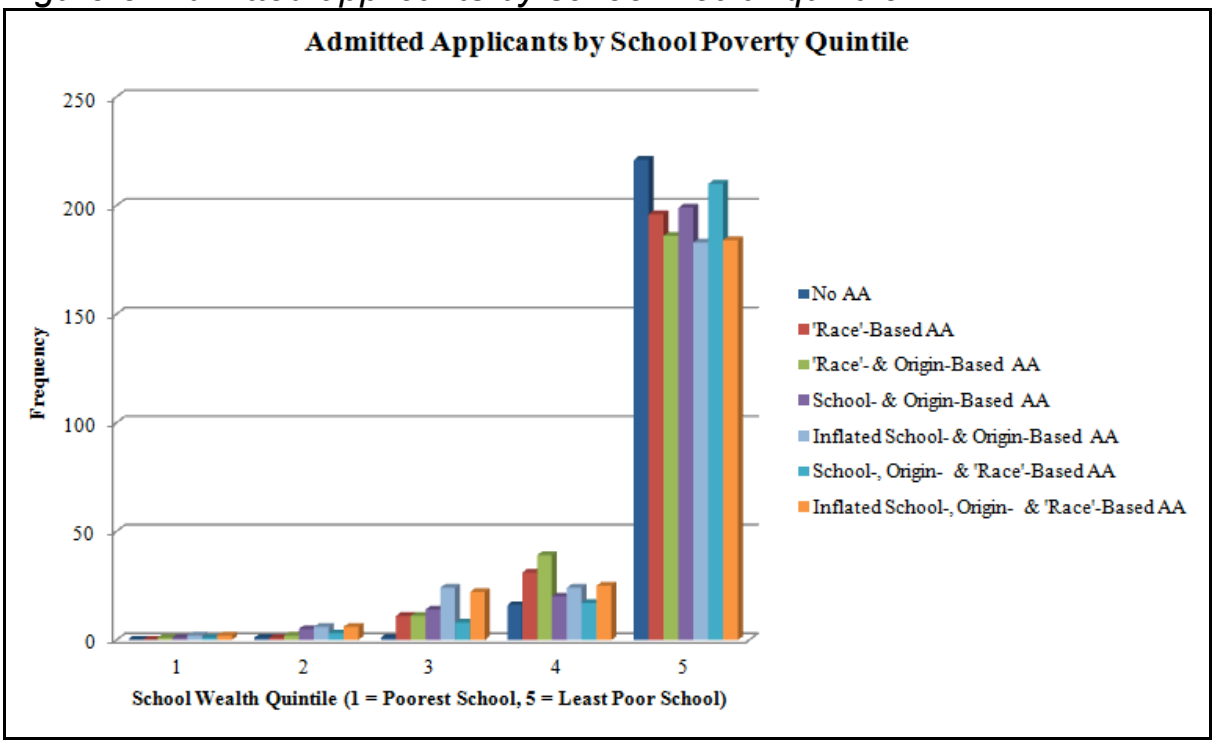
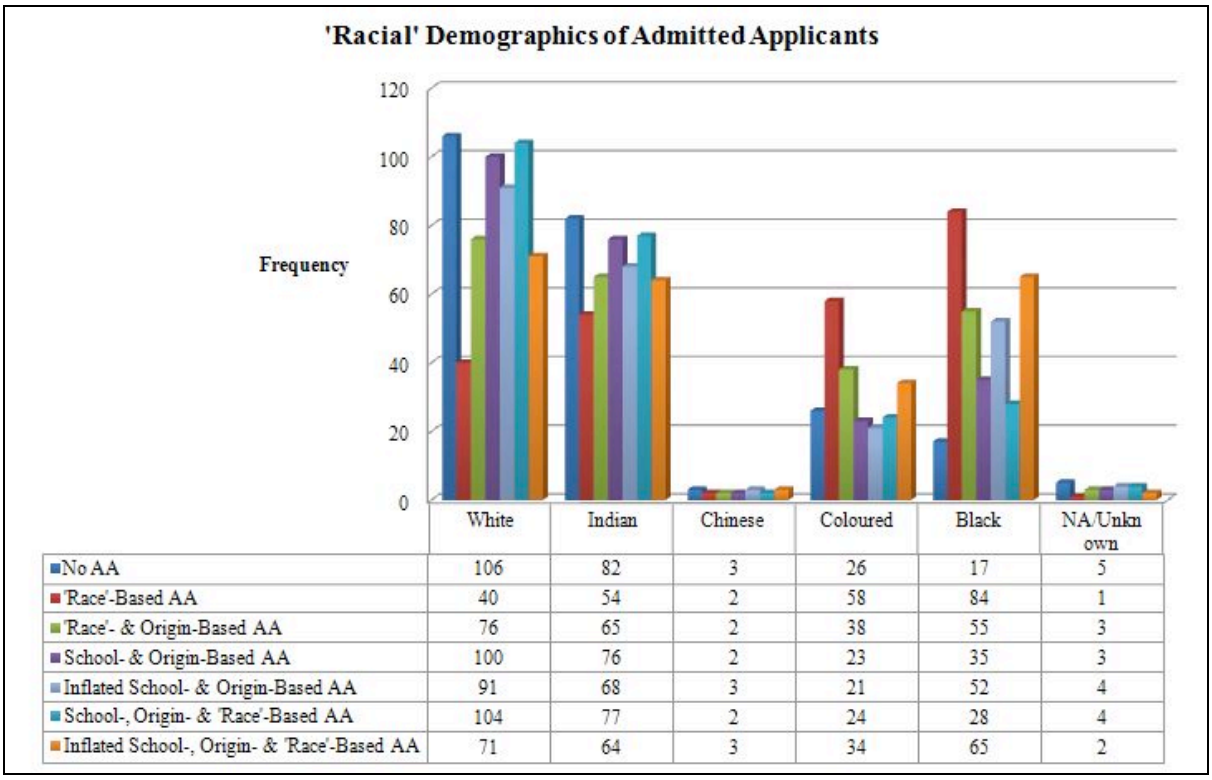


Figure 6: Admitted applicants by 'race'



	White	Indian	Chinese	Coloured	Black	NA/Unknown
No AA	106	82	3	26	17	5
'Race'-Based AA	40	54	2	58	84	1
'Race'- & Origin-Based AA	76	65	2	38	55	3
School- & Origin-Based AA	100	76	2	23	35	3
Inflated School- & Origin-Based AA	91	68	3	21	52	4
School-, Origin- & 'Race'-Based AA	104	77	2	24	28	4
Inflated School-, Origin- & 'Race'-Based AA	71	64	3	34	65	2

6. Discussion and Conclusions

Limitations of This Study

This study has three primary limitations. Firstly, as it relied on narrow data collected by the University of Cape Town Medical School Admissions Department as part of the 2011 application process, the utility of indicators other than school wealth and region of origin could not be assessed. Ideally, the possible roles of class, character, geographical status and dedication to the greater good, as indicated by a number of factors would have been considered.

Secondly, just as ‘race’ is not adequate as a sole indicator of disadvantage, school wealth also cannot take on this role. Thus, the imprecision of using school quality as a measure of disadvantage is recognised. There are other factors, which when taken together could paint a more comprehensive picture of the extent of disadvantage experienced by various applicants; for instance, income, generations of university graduates, or access to books and computers

(Erasmus, 2009a). However, as data for these factors was not requested in the 2011 application process, they were not able to be included in this study.

Thirdly, the reliance on high school location as an indicator of urban or rural origin is problematic, as applicants may not reside in the area in which they attend school. Often, students from rural areas attend boarding schools in metropolitan centres in response to poor school quality in rural areas. Thus, classification of residential region would have been a more useful way to determine whether an applicant is of an urban or rural background.

Utility of Alternative Affirmative Action Systems

Despite these limitations, this study has two significant findings. Firstly, the data suggest that alternative systems of affirmative action which do not rely on the use of 'race' can be effective in addressing societal inequalities and demographic maldistribution of physicians. Specifically, school wealth has been shown to be a useful indicator of disadvantage; analysis of the 3rd alternative system of affirmative action (inflated school- and origin-based affirmative action) revealed that allocating points on the basis of school wealth increased acceptance of both applicants from poor schools and applicants classified as Black. This is significant as 'racial' redress was able to be achieved without utilising apartheid 'race' categories.

Secondly, the results of this study suggest that affirmative action policies which additionally take region of origin into account tend to increase acceptance of students from rural areas, and thus have promising implications for addressing geographic maldistribution of physicians. Therefore, within the confines of this study one may conclude that inflated school- and origin-based affirmative action was the most successful alternative to 'race' based systems.

In conclusion, the findings suggest that within the context of the University of Cape Town Medical School, it is possible to utilise factors other than 'race' to create an effective affirmative action policy aimed at redressing inequality without keeping 'race' consciousness alive in the minds of South Africans. The results further suggest that such a policy has promising implications for addressing both demographic and geographic maldistribution of physicians. As inequalities continue to permeate South African society, both of these conclusions have implications for the selection criteria and policies of medical universities.

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